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We claim:

1. A process for preparing 2,3-cis-substituted 2-arylpropenals by condensing a 2-arylacetaldehyde I with a nonenolizable aldehyde compound II in the presence of a base, which comprises carrying out the reaction in a solvent mixture which includes at least one water-miscible organic solvent and water in a  $V_{\text{solvent}}:V_{\text{water}}$  volume ratio of from 10:1 to 0.5:1 and wherein the 2-arylacetaldehyde I and the nonenolizable aldehyde compound II are used in a molar I:II ratio in the range from 1:1.05 to 1:5.
2. The process as claimed in claim 1, wherein the organic solvent is selected from  $C_1$ - $C_4$ -alkanols or/and mono( $C_1$ - $C_4$ -alkyl) glycols.
3. The process as claimed in either of the preceding claims, wherein the base used is alkali metal or/and alkaline earth metal hydroxides.
4. The process as claimed in any of the preceding claims, wherein the base is used in an amount of from 0.5 to 30 mol%, based on the nonenolizable aldehyde compound II.
5. The process as claimed in any of the preceding claims, wherein the reaction is carried out in the presence of an acidic cocatalyst.
6. The process as claimed in claim 5, wherein the cocatalyst is used in an amount from 5 to 80 mol-%, based on the base.
7. The process as claimed in claim 5 or 6, wherein the acidic cocatalyst is selected from NH-acidic compounds having a  $pK_a$  value in dimethyl sulfoxide in the range from 10 to 25, boric acid, phosphoric acid, carboxylic acids, phenols and oximes.
8. The process as claimed in any of the preceding claims, wherein the 2-arylacetaldehyde I is added to a solution or suspension of the nonenolizable aldehyde compound II.
9. The process as claimed in any of the preceding claims, wherein the 2-arylacetaldehyde I and the nonenolizable aldehyde compound II are used in a molar I:II ratio in the range from 1:1.1 to 1:3 and, optionally, excess nonenolizable aldehyde compound II is fully or partly recovered.
10. The process as claimed in any of the preceding claims, wherein the 2-arylacetaldehyde I used is phenylacetaldehyde which optionally has one or more substituents selected from fluorine, chlorine, bromine and iodine on the phenyl ring.

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11. The process as claimed in any of the preceding claims, wherein the nonenolizable aldehyde compound II is benzaldehyde which optionally has one or more substituents on the phenyl ring which are selected from

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- C<sub>1</sub>-C<sub>10</sub>-alkyl which optionally has one or more substituents other than alkyl which may be selected from fluorine, chlorine, bromine, iodine, C<sub>1</sub>-C<sub>10</sub>-alkoxy or C<sub>3</sub>-C<sub>10</sub>-cycloalkyl;
- 10 - C<sub>1</sub>-C<sub>10</sub>-alkoxy which optionally has one or more substituents other than alkyl which may be selected from fluorine, chlorine, bromine, iodine, C<sub>1</sub>-C<sub>10</sub>-alkoxy and C<sub>3</sub>-C<sub>10</sub>-cycloalkyl;
- C<sub>3</sub>-C<sub>10</sub>-cycloalkyl which optionally has one or more substituents other than alkyl which may be selected from fluorine, chlorine, bromine, iodine and C<sub>1</sub>-C<sub>10</sub>-alkoxy;
- 15 - phenoxy which is optionally substituted by 1,2,3,4 or 5 groups selected from C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy, fluorine, chlorine, bromine and iodine;
- halogen which is selected from fluorine, chlorine, bromine and iodine;
- C<sub>1</sub>-C<sub>10</sub>-acylamino; and
- 20 - a nitro group.

12. A process as claimed in any of the preceding claims, wherein the 2-arylacetaldehyde I used is 4-fluorophenylacetaldehyde and the nonenolizable aldehyde compound II used is 2-chlorobenzaldehyde.

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